

Summary of Cancer Incidence and Mortality for Zip Code 29414 (Charleston, SC)

Cancer Incidence in Zip Code 29414

The first step in the analysis of cancer data for zip code 29414 was to look at the number of new cancer cases diagnosed in the zip code and compare this to the number of cancer cases expected (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Table 1 shows what types of cancer occurred in zip code 29414 from 1996-2000, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected. A total of 392 new cases of cancer occurred in the zip code, while 465 cases were expected. The most common types of cancer were female breast, lung, prostate, and colon/rectum cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis revealed that the number of **melanoma cases** that occurred was significantly higher than expected. A total of 28 cases of melanoma were diagnosed while 17 cases were expected. The main risk factor for melanoma is excessive exposure to ultraviolet radiation from sunlight or tanning booths. Also, having certain types of moles makes a person more likely to develop melanoma. Finally, the risk of melanoma is greater if one or more of a person's first-degree relatives have been diagnosed with melanoma¹.

Cancer Deaths in Zip Code 29414

To assess cancer deaths in this zip code, cancer mortality data from 1996-2000 were used. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred and the number expected in the zip code. A total of 175 cancer deaths occurred in this zip code, while 212 deaths were expected. Therefore, fewer cancer deaths occurred than expected. However, **colon/rectum cancer deaths** were significantly higher than expected.

A total of 30 colon/rectum cancer deaths occurred while 21 were expected. The risk of developing colon/rectum cancer increases greatly after age 50. About 90% of people found to have colorectal cancer are older than 50. Obesity, a diet high in animal fat, physical inactivity and smoking also increase risk. Also a family history of polyposis or a personal history of colon/rectum cancer, intestinal polyps, or chronic inflammatory bowel disease increase the risk of developing colon/rectum cancer¹.

Conclusions

To summarize, fewer cancer cases and deaths occurred in zip code 29414 than expected. The number of melanoma cases that occurred in the zip code was significantly higher than expected. Statistics show that Charleston County ranks 1st in the state for melanoma incidence. Therefore, high melanoma incidence is a trend seen not only in zip code 29414, but also across all of Charleston County.

Finally, there was a significant excess of colon/rectum cancer deaths in zip code 29414. Research has shown that the majority of risk factors associated with both melanoma and colon/rectum cancers are caused by "lifestyle" risk factors, i.e. exposure to UV radiation, high fat diets, smoking.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers like lung or colon/rectum cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip code 29414.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

Report provided by:

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References

1. American Cancer Society, 2001. www.cancer.org

Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control.

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Table 1. Analysis of New Cancer Cases in Zip Code 29414, 1996-2000

<u>Cancer Site</u>	<u>Observed No. of Cases</u>	<u>Expected No. of Cases</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest*</u>
Breast (Female)	61	73.6	0.83	2.16
Lung/Bronchus	54	71.1	0.76	4.11
Prostate	50	71.3	0.70	6.36
Colon/Rectum	48	52.5	0.91	0.39
Melanoma	28	17.4	1.61	6.46
Bladder	17	17.5	0.97	0.01
Oral/Pharynx	16	13.8	1.16	0.35
Pancreas	10	10.1	0.99	0.00
Ovary	10	8.1	1.23	0.45
Non-Hodgkin's Lymphoma	9	15.4	0.58	2.66
Uterus	9	11.6	0.78	0.58
Kidney/Renal Pelvis	9	11.9	0.76	0.71
Leukemia	8	9.1	0.88	0.13
Stomach	7	7.3	0.97	0.01
Larynx	7	5.8	1.21	0.25
Thyroid	7	5.7	1.23	0.30
Brain/CNS	5	6.6	0.76	0.39
Cervix	3	7.6	0.39	2.78
Esophagus	2	6.4	0.31	3.03
Multiple Myeloma	1	5.1	0.20	3.30
All Sites	392	464.8	0.84	11.40

Excludes in situ cases of cancer to allow for comparison.

Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

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Table 2. Analysis of Cancer Deaths in Zip Code 29414, 1996-2000

<u>Cancer Site</u>	<u>Observed No. of Deaths</u>	<u>Expected No. of Deaths</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest*</u>
Lung/Bronchus	52	61.3	0.85	1.41
Colon/Rectum	30	20.9	1.43	3.94
Breast (Female)	12	16.7	0.72	1.31
Prostate	13	13.4	0.97	0.01
Unknown/III-Defined	7	12.9	0.54	2.68
Pancreas	8	11.5	0.70	1.06
Non-Hodgkin's Lymphoma	8	7.6	1.05	0.02
Leukemia	8	7.5	1.07	0.03
Brain/CNS	6	5.7	1.06	0.02
Stomach	5	5.4	0.92	0.03
Esophagus	3	5.3	0.57	0.98
All Sites	175	211.7	0.83	6.36

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is significantly different from the expected number of deaths.

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